

Message

From: McAteer, Mike [mcateer.mike@epa.gov]
Sent: 8/30/2017 2:44:18 PM
To: Young, Patrick [young.patrick@epa.gov]
CC: Bernier, Roberto [bernier.roberto@epa.gov]
Subject: RE: IMAAC - Potential Chemical Release in Crosby, TX (HOT)

All quantities came directly from Arkema.... I will check with Rhotenberry to see if Arkema has revised its estimate on peroxide quantity yet....



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mcateer.mike@epa.gov

From: Young, Patrick
Sent: Wednesday, August 30, 2017 6:50 AM
To: McAteer, Mike <mcateer.mike@epa.gov>; Bernier, Roberto <bernier.roberto@epa.gov>
Cc: Carroll, Craig <Carroll.Craig@epa.gov>; R6HarveyPSC <R6HarveyPSC@epa.gov>; R6HarveySITL <R6HarveySITL@epa.gov>; Pettigrew, George <pettigrew.george@epa.gov>; Lyke, Jennifer <Lyke.Jennifer@epa.gov>; Kowalski, Peter J. (ATSDR/DCHI/SSB) <pek2@cdc.gov>; 'Nickle, Richard' <Nickle.Richard@epa.gov>
Subject: FW: IMAAC - Potential Chemical Release in Crosby, TX (HOT)

Mike and Roberto,

Can you please review Riches email below and get back with him on his concerns.

CAPT Patrick Young, RS, MS
U.S. Public Health Service
ATSDR R6 Regional Rep
Division of Community Health Investigation
Dallas, Texas
214-665-8562 (o)

From: Nickle, Richard (ATSDR/DTHHS/OD) [<mailto:ran2@cdc.gov>]
Sent: Tuesday, August 29, 2017 7:48 PM
To: Pettigrew, George <pettigrew.george@epa.gov>; Young, Patrick <young.patrick@epa.gov>
Subject: FW: IMAAC - Potential Chemical Release in Crosby, TX

Hi, I would like to ask a favor. I was thinking about this on the drive home from work. The thing that bothers me is the highlighted section of my summary. We got the notice late and I joined the call late. I didn't hear the introductions. The OSC was named Mike and I think the person who was in the REOC was Roberto. I didn't hear that

part well; folks were talking over each other and people were talking in the background as well. Here is my concern and it may be something Mike needs to think about. I need first to say that there may have been an explanation that I missed and some of this is based on experiences that occurred before maybe some of the folks on the call were born. The bottom line is that I think EPA needs to find out where this 1M pounds estimate came from and we may need to be discrete about raising the issue in the first place. Let me explain.

IMAAC indicated that they were basing their models on 1 million pounds of the peroxide. I don't know what peroxide is involved, but 1 million pounds split between 8 trailers means that each trailer is holding about 125,000 pounds or roughly 62 tons of the product. That seems very heavy to me. Most railcars carry around 35 tons and the biggest road worthy vehicle I know of runs 20 tons. Most large trucks carry around 10 tons. Moreover, assuming a proportional weight, 125,000 pounds would equate to about 350 drums per trailer. Most box trailers – which I assume these reefer trailers to be – carry 80 55-gallons drums max. I don't think 35 gallons drums are that much smaller than a 55 gallon drums. So I think there are two options. The first is easy; someone miscalculate the total weight and the actual quantity of peroxide is around 150,000 to 250,000 pounds. That would significantly affect the IMAAC model, especially if they look at only one trailer exploding.

Miscalculation would be great, but I'm afraid the other option is quite possible. My understanding from an article in the Houston Chronicle that relies almost exclusively on an interview with the wife of a worker (yes that worries me a bit) is that the facility needed to get these drums of peroxide out of a warehouse that could not keep them cool enough. The people at the scene may quite reasonably have figured reefer trailers were a solution; actually that would be pretty brilliant. A warehouse could probably hold 1 million pounds of product, but if they could only get 8 reefers, the facility folks may have crammed all the product into those 8 trailers. It may be that the trailers can actually hold that much more weight (roughly 3X normal) in a static situation for a period of time. However, depending on the nature of the flood waters (e.g., fast moving flows or very turbulent flows), the situation with the trailers may not be all that static. Regardless of stressors due to flood waters, if the trailers were loaded sometime yesterday, they may have been under stress from the excessive weight for going on 36 hours. By the time flood water recede, power restored, and the trailers unloaded, it may be closer to 120 hours or even longer before the stress on the trailers is relieved. I don't know how well the trailers can hold up under the weight or for how long if they are truly carrying 125,000 pounds each. If the response team at the facility does not include a transportation specialist, then they may not realize that the trailers could be overweight. They may realize it and decide it is worth the risk. It may be; I don't know. However, the EPA responders need to understand that those trailers could be comparatively fragile. In any event, if they are currently loaded to 125,000 pounds, those trailers may need to be inspected or taken off the road permanently after this.

I'm am not trying to upset anyone or imply anything other than an honest mistake occurred under either of the two options. If there has not be a miscalculation of the weight, I think this question about the trailers is something EPA and maybe DOT motor carrier folks to consider. This assumes my assumptions about normal cargo weights in the second paragraph above are as valid as they were many years ago when I dealt with issues like this.

Hope this helps and doesn't hinder.

Richard A. Nickle, MPH
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770-488-3343 (Office)
404-791-7951 (Cell)

From: Nickle, Richard (ATSDR/DTHHS/OD)

Sent: Tuesday, August 29, 2017 5:03 PM

To: CDC IMS Incident Manager -2 <eocim2@cdc.gov>

Cc: George Pettigrew <Pettigrew.George@epamail.epa.gov>; Holler, James S. (Jim) (ATSDR/DTHHS/OD) <jsh2@cdc.gov>; Murray, Ed (ATSDR/DTHHS/OD) <hem0@cdc.gov>; Dunnick, Amanda K. (CDC/ONDIEH/NCEH) <abd5@cdc.gov>; Brooks, Barry (ATSDR/DTHHS/OD) <arj2@cdc.gov>; Cibulas, William (ATSDR/OADS) <wic1@cdc.gov>; EOC Report (CDC) <eocreport@cdc.gov>

Subject: FW: IMAAC - Potential Chemical Release in Crosby, TX

At the request of the EOC, I participated in the IMAAC call described below with EPA 6 and DHS/CSAC. This is the situation I highlighted in my report this morning. There is additional information from this call that was convened to clarify the support EPA was requesting from the IMAAC. The company has a response and management team still at the facility in a safe location; other personnel were evacuated by local authorities. The facility lost power and is flooding. There are 8 trailers filled with 35-gallon containers of an organic peroxide; total weight is estimated to be 1 million pounds of peroxide. They have 6 days worth of fuel to power diesel generators to keep the trailers cool. The surrounding community has been ordered to evacuate due to the flooding and local authorities are going through the neighborhoods to make sure everyone has left. One of the 8 trailers is too isolated for them to cool properly and they anticipate that trailer's temperature will go critical sometime in the next 24 hours. When the interior of the trailer reaches this temperature, one of 2 things can happen.

1. If there is an ignition source, the trailer could explode. This might set off the other 7 trailers; the peroxide is estimated by IMAAC to have about 20% of the blast energy in an equivalent amount of TNT. IMAAC estimates the explosion of all 8 trailers would damage eardrums and break windows up to a kilometer away. A rough count on Google Earth, approximately 20 homes or other structures are within that radius. As stated above, these buildings should be evacuated due to the flooding
2. If there is no ignition source, the peroxide will decompose likely damaging the 35 gallon drums. This would cause the peroxide to leak out of the trailer. The facility is flooding and the trailers are sitting in approximately 4 feet of slowly rising water. In this scenario, the peroxide would be expected to react out to hydrogen peroxide and dissipate rapidly in the water column.

In addition to the peroxide trailers, there is a 50,000 gallon steel tank of sulfur dioxide approximately 1000' from the trailer at risk of overheating as well as 3 100 pound cylinders of chlorine gas. The company team does not expect the trailer to explode because there is no ignition source inside the trailer and the trailer is isolated from other possible sources. If the single trailer explodes, the company does not think the sulfur dioxide tank or the chlorine cylinders will be damaged. In response to my question, the EPA OSC indicated the company is focused on maintaining the isolation for this one trailer of concern to avoid any possibility of an ignition source. I also asked about the possibility that the peroxide may become shock sensitive when it begins to degrade; there is no information about that possibility as yet. EPA indicated they would raise that question with the plant responders in a call scheduled for later tonight.

EPA 6 requested IMAAC model a catastrophic failure of the sulfur dioxide tank. CSAC cautioned the modelers that the failure may occur below the flood water lines creating a sulfuric acid plume in the water as opposed to an air release of sulfur dioxide if the failure occurred above the water. In the event of the air release, the sulfur dioxide being heavier than air may hug the surface of the water and slowly go into solution.

The consensus of the call was that the optimum solution to this situation is to avoid the explosion and allow the peroxide to leak into the floodwaters to dissipate. This is what the company response team

expects will happen; CSAC seemed to agree with the company's assessment. The evacuation of the surrounding community initiated due to the flooding can be maintained until the situation at the plant becomes stable.

IMAAC may or may not share the results of their model of the sulfur dioxide release with CDC/ATSDR. I will continue to watch for information on this situation.

From: ATSDR Emergency Response
Sent: Tuesday, August 29, 2017 3:45 PM
To: Nickle, Richard (ATSDR/DTHHS/OD) <ran2@cdc.gov>
Subject: FW: Hypothetical IMAAC Incident - Chemical Release in Crosby, TX

From: EOC Report (CDC)
Sent: Tuesday, August 29, 2017 3:45:21 PM (UTC-05:00) Eastern Time (US & Canada)
To: ATSDR Emergency Response; Nickle, Richard (ATSDR/DTHHS/OD); Mahany, Mollie (CDC/ONDIEH/NCEH)
Cc: EOC Report (CDC)
Subject: FW: Hypothetical IMAAC Incident - Chemical Release in Crosby, TX

Please see below from IMAAC.

v/r

Chris Harper
CDC EOC Watch Officer
Primary: 770-488-7100
Alternate: 404-444-2638
eocreport@cdc.gov

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From: DTRA Ft Belvoir J9 Mailbox Reachback [<mailto:dtra.belvoir.J9.mbx.reachback@mail.mil>]
Sent: Tuesday, August 29, 2017 3:27 PM
To: DTRA Ft Belvoir J9 Mailbox Reachback <dtra.belvoir.J9.mbx.reachback@mail.mil>; DTRA Ft Belvoir J3-7 Mailbox Joint Ops Center <dtra.belvoir.J3-7.mbx.joint-ops-center@mail.mil>; fema-nwc@fema.dhs.gov; Leonard.willittsjr@fema.dhs.gov
Subject: Hypothetical IMAAC Incident - Chemical Release in Crosby, TX

IMAAC Technical Operations has been asked to create a modeling product for the EPA for a hypothetical chemical release in Crosby, TX at 1800Z. This is a request is for a single agency and only involves a hypothetical incident at this time. Products are posted to the IMAAC HSIN portal. Should the situation change, a notification informing IMAAC participants of this change (and any additional details) will be sent out. Please inform us if another IMAAC agency has been asked to respond to the same incident.

IMAAC Technical Operations will conduct a coordination teleconference at 3:50 PM EDT (2:50 PM CDT) to discuss source term and weather information, the initial modeling product, and other agency modeling products (if available).

Teleconference information:

Phone number: 1-800-320-4330

PIN: 692400#

IMAAC TECHNICAL OPERATIONS HUB

Phone: 703-767-2003

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